

SEQUENCE LISTING

<110> Korea Research Institute of Bioscience and Biotechnology

<120> Multiple stress-inducible peroxidase promoter derived from
Ipomoea batatas

<130> 4fpo-02-03

<160> 30

<170> KopatentIn 1.71

<210> 1

<211> 1512

<212> DNA

<213> Ipomoea batatas

<400> 1

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ggcatctcct cgggcaagct ttccgacgaa gactgcata tctccgccgt taaggaagtg      240
gtggacgccg ccattgatgc agaaaccgc atgggtgctt ccctcattcg cctcttcttc      300
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 gaagatgagc ctctcgccgc cgtcccccg agtggagctc gaaatccgag aggtttgcag 1320
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 gtctgtgatt ctgtgaaagt tttactcgga ctgtgaagaa ttttcacttt ctgttggttc 1440
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 ataaatttgt ta 1512

<210> 2
 <211> 110
 <212> DNA
 <213> Ipomoea batatas

<220>
 <221> promoter
 <222> (1)..(110)
 <223> -110 deletion promoter

<400> 2
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 tcgaccactc atttcttctt catacttcct ttgctgtgat aatcatcatc 110

<210> 3
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 <212> DNA
 <213> Ipomoea batatas

<220>
 <221> promoter
 <222> (1)..(177)
 <223> -177 deletion promoter

<400> 3
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 gaagaacttt ccctttcaag ttctctattt aaggaagcct gagaagccat taatcctcat 120
 catcagctcg accactcatt tcttcttcat acttcctttg ctgtgataat catcatc 177

<210> 4
 <211> 306
 <212> DNA
 <213> Ipomoea batatas

<220>
 <221> promoter

<222> (1)..(306)
 <223> -306 deletion promoter

<400> 4
 taaggtgttt tatcgtggca gcatgagtgc atgacaaacg catatattat tattaaaaca 60
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 aattagaaca aattaaatct cagtttgctt tattatatta ttatcaacaa taataattta 180
 atactgatcg aagaactttc cctttcaagt tctctattta aggaagcctg agaagccatt 240
 aatcctcatc atcagctcga ccactcattt cttcttcata cttcctttgc tgtgataatc 300
 atcatc 306

<210> 5
 <211> 366
 <212> DNA
 <213> Ipomoea batatas

<220>
 <221> promoter
 <222> (1)..(366)
 <223> -366 deletion promoter

<400> 5
 tagtataatg aaataaagtt aatcattctc tatatttgat gatggtaatt agtatcatgg 60
 taaggtgttt tatcgtggca gcatgagtgc atgacaaacg catatattat tattaaaaca 120
 aaatagtact ccaatcataa taaattatct tatattatat tgccaacaat taaaaattca 180
 aattagaaca aattaaatct cagtttgctt tattatatta ttatcaacaa taataattta 240
 atactgatcg aagaactttc cctttcaagt tctctattta aggaagcctg agaagccatt 300
 aatcctcatc atcagctcga ccactcattt cttcttcata cttcctttgc tgtgataatc 360
 atcatc 366

<210> 6
 <211> 433
 <212> DNA
 <213> Ipomoea batatas

<220>
 <221> promoter
 <222> (1)..(433)
 <223> -433 deletion promoter

<400> 6
 atggtgactt aaagggctga atccaacata tattotgaca tttaaaaatg ctaacgtacg 60

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taaaacaaaa tagtactcca atcataataa attatcttat attatattgc caacaattaa 240
aaattcaaat tagaacaacat taaatctcag ttgtgtttat tatattatta tcaacaataa 300
taatttaata ctgatcgaag aactttccct ttcaagttct ctatttaagg aagcctgaga 360
agccattaat cctcatcatc agctcgacca ctcatctctt cttcatactt cctttgctgt 420
gataatcatc atc 433

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<210> 7
<211> 818
<212> DNA
<213> Ipomoea batatas

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<220>
<221> promoter
<222> (1)..(818)
<223> -818 deletion promoter

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<400> 7
gcttcacgca ctcaactagt cacatctttc caggcaaaat ttacttttct atgaatatga 60
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tctcgagtgg aacaaaaata gaactaattt gaacaaatca aagtctaaga aaataataca 180
tgcttttagca gcaaaaaata gaatggtact atacttaatc ctcatcatag tcttcaaccc 240
tgcatatagc aactttaaca ttttatattc aaatatactt taatttagtc atgataatac 300
aactcaccta ctccattata gccgataata caactcacct agctactcca ttatagtcca 360
acaatatcaa atgaataaaa tagtaatggt gacttaaagg gctgaatcca acatatattc 420
tgacatttaa aaatgctaac gtacggttag attagtataa tgaaataaag ttaatcatc 480
tctatatttg atgatggtaa ttagtatcat ggtaagggtg tttatcgtgg cagcatgagt 540
gcatgacaaa cgcatatatt attattaaaa caaaatagta ctccaatcat aataaattat 600
cttatattat attgccaca attaaaaatt caaattagaa caaattaaat ctgagtttgc 660
tttattatat tattatcaac aataataatt taatactgat cgaagaactt tccctttcaa 720
gttctctatt taaggaagcc tgagaagcca ttaatcctca tcatcagctc gaccactcat 780
ttcttcttca tacttccttt gctgtgataa tcatcatc 818

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<210> 8

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<211> 1199
 <212> DNA
 <213> Ipomoea batatas

<220>
 <221> promoter
 <222> (1)..(1199)
 <223> -1199 deletion promoter

<400> 8
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 catttaatta aattttctatc ctcatgttga acccataat cgaataattg acatattaga 180
 taaacttagc catcatatga catttgatca tgattgatga tttttaaaaa ataaaaacaa 240
 aattatgaaa gggtaatgaa atatttttaa aaaattatgt aaaccctgta atctagtaat 300
 ctgtacaata ataattttgt ttcaactaag aggatgttgg caaaagtata attaaacttg 360
 tgatcttcgt acaataatta tgcttcacgc actcaactag tcacatcttt ccaggcaaaa 420
 tttacttttc tatgaatatg agaagttcca tctatggaaa taacggatta tttatctaata 480
 tttcaaattc tatatatata gtctcgagtg gaacaaaaat agaactaatt tgaacaaatc 540
 aaagtctaag aaaataatac atgcttttagc agcaaaaata agaatgggtac tataacttaat 600
 cctcatcata gtottcaacc ctgcatatag cacacttaac attttatatt caaatatact 660
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 tcgaagaact ttccctttca agttctctat ttaaggaagc ctgagaagcc attaatcctc 1140
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<210> 9
 <211> 1467
 <212> DNA
 <213> Ipomoea batatas

<220>

<221> promoter
 <222> (1)..(1467)
 <223> -1467 deletion promoter

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 ataaaaata ttgggtcaaa ataccttacc gatttttccc aaatattcac ggaacttact 180
 gccagaatct accctgcttt ttccctttcac tattttcaca actataagca tatatgggca 240
 taaatatgac atgaacatgc atgaaccaat gcagggtgaa agtaagattg aatatactga 300
 tactacaatt aactaatgat aaagtataac ttttgtaaaa aatttgattt ttttttttga 360
 tgaattcata tactccaaag attttcctca tttaattaaa tttctatcct catgttgaac 420
 ccattaatcg aataattgac atattagata aacttagcca tcatatgaca tttgatcatg 480
 attgatgatt tttaaaaaat aaaaacaaaa ttatgaaagg gtaatgaaat attttaaaaa 540
 aattatgtaa accctgtaat ctagtaatct gtacaataat aattttgttt caactaagag 600
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 aatgctaacg tacggttaga ttagtataat gaaataaagt taatcattct ctatatattga 1140
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 acttcctttg ctgtgataat catcatc 1467

<210> 10

<211> 1934
 <212> DNA
 <213> Ipomoea batatas

<220>
 <221> promoter
 <222> (1)..(1934)
 <223> -1934 deletion promoter

<400> 10
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 aatatcatct ctacttaaac tagagagatt tccaactctc aattaatcac caaaggtaac 180
 tctccaaata tccaaatgga aggtttcaac ttccaaacta ataccaaacc aaccggacta 240
 atcataatca tattcataat cataaattgt ttctaactgc ccctgtccag aaattacagt 300
 tttgcgcagt ccgaaagatt gagccggtaa caatagttcc cgaactcttt ttcacttgaa 360
 atttttatgg tagaacccta acttatagta cttgatatcc ataaaaagtt ttgggtcacct 420
 aggttcacga attaacacag aaaattacat ctttgccctt ggcagtgggc tgtccggaat 480
 tctgtctctc tggaccagtt ttggcaaaca attttgaaac cacacttata ctactccaaa 540
 aattatgaaa tttttatggt agcttctaca cttatagaac tacatgtata aaaaatattg 600
 ggtcaaaaata cottaccgat ttttcccaaa tattcacgga acttactgcc agaactctacc 660
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 aacatgcatg aaccaatgca gggtgaaagt aagattgaat atactgatac tacaattaac 780
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 aaaaaataaa aacaaaatta tgaaagggtg atgaaatatt ttaaaaaaat tatgtaaacc 1020
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 gtataattaa acttgtgatc ttogtacaat aattatgctt cacgcactca actagtcaca 1140
 tctttccagg caaaatttac ttttctatga atatgagaag ttccatctat ggaaataacg 1200
 gattatttat ctaattttca aattctatat atatagtctc gagtggaaca aaaatagaac 1260
 taatttgaac aaatcaaagt ctaagaaaat aatacatgct ttagcagcaa aaataagaat 1320
 ggtactatac ttaatcctca tcatagtctt caaccctgca tatagcacac ttaacatttt 1380
 atattcaaat atactttaat ttagtcatga taatacaact cacctactcc attatagccg 1440

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ataatttaaat actgatcgaa gaactttccc tttcaagttc tctatttaag gaagcctgag 1860
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<210> 11
<211> 2433
<212> DNA
<213> Ipomoea batatas

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<220>
<221> promoter
<222> (1)..(2433)
<223> -2433 promoter

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<400> 11
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attaatcacc aaaggtaact ctccaaatat ccaaattgaa ggtttcaact tccaaactaa 720
taccaaacca accggactaa tcataatcat attcataatc ataaattggt totaactgcc 780

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cctgtccaga aattacagtt ttgcgcgagtc cgaaagattg agccggtaac aatagttccc 840
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acctactcca ttatagccga taatacaact cacctagcta ctccattata gtccaacaat 1980
atcaaatgaa taaaatagta atggtgactt aaagggtga atccaacata tattctgaca 2040
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cttcatactt cttttgctgt gataatcatc atc 2433

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<210> 12

<211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> GSP1 promoter

<400> 12
 ctgagccgag tgacaaagga agccat

26

<210> 13
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> AP1 promoter

<400> 13
 gtaatacgac tcactatagg gc

22

<210> 14
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> GSP2 promoter

<400> 14
 cacagcaaag gaagtatgaa gaagc

25

<210> 15
 <211> 19
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> AP2 promoter

<400> 15
 actatagggc acgcgtggt

19

<210> 16
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> exon promoter

<400> 16
atggcttcct ttgtcactcg gctcag 26

<210> 17
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> intron promoter

<400> 17
tcacagctc gaccactcat ttctttcttca 30

<210> 18
<211> 35
<212> DNA
<213> Artificial Sequence

<220>
<223> forward promoter for -2433 deletion promoter

<400> 18
gccaaagcttg gtcctcatgg agtattctca taact 35

<210> 19
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> forward primer for -1934 deletion promoter

<400> 19
gccaaagcttt tgccatctca ccaattcgtc tta 33

<210> 20
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> forward primer for -1467 deletion promoter

<400> 20
gccaaagcttg gctgtccgga attctgtctc t 31

<210> 21
 <211> 33
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> forward primer for -1199 deletion promoter

<400> 21
 gccaaagctta tgcaggggtga aagtaagatt gaa 33

<210> 22
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> forward primer for -818 deletion promoter

<400> 22
 gccaaagcttg cttcacgcac tcaact 26

<210> 23
 <211> 33
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> forward primer for -433 deletion promoter

<400> 23
 gccaaagctta tgggtgactta aaggggtgaa tcc 33

<210> 24
 <211> 34
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> reverse primer for -2433, 1934, 1467, 1199, 818, 433, 366, 306,
 177 and 110 deletion promoter

<400> 24
 tcctctagag atgatgatta tcacagcaaa ggaa 34

<210> 25
 <211> 31
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> forward primer for -366 deletion promoter

<400> 25
 ttctctgcaga tagtataatg aaataaagtt a 31

<210> 26
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> forward primer for -306 deletion promoter

<400> 26
 tttctgcagt aaggtgtttt atcgtg 26

<210> 27
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> forward primer for -177 deletion promoter

<400> 27
 ttctctgcaga aattaaatct cagtt 25

<210> 28
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> forward primer for -110 deletion promoter

<400> 28
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<210> 29
 <211> 19
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> forward primer for NPTII

<400> 29
 gaggtattc ggctagatg 19

<210> 30
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> reverse primer for NPTII

<400> 30
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21